

REMARKS

Claims 111, 121, 126, 131, 136, 146, 148 and 157 have been amended. No new matter has been added. Claims 114 and 143 have been canceled and their subject matter incorporated into other claims. Claims 111-112, 115-141, 144-158 and 160-163 are currently pending in this application. Applicant reserves the right to pursue the original and other claims in this and other applications.

Claims 111, 112, 117, 136, 141, 157 and 158 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Kwok et al. (U.S. Patent No. 6,373,088) ("Kwok"). The rejection is respectfully traversed and reconsideration is respectfully requested.

Claim 111 recites a metal-polysilicon contact including a "polysilicon layer," a "barrier layer formed over [the] polysilicon layer," "at least one conductive layer formed over [the] barrier layer in an opening of an insulating layer [and] having at least one vertically extending surface in [the] opening," and "at least one layer capable of absorbing oxygen formed adjacent to and contacting [the] at least one vertically extending surface of [the] conductive layer."

Claim 136 recites a metal-polysilicon contact including a "polysilicon layer," a "barrier layer," "at least one conductive layer formed over [the] barrier layer in an opening of an insulating layer [and] having at least one vertically extending surface in [the] opening," and "at least one oxygen sink layer formed adjacent to and contacting [the] at least one vertically extending surface of [the] conductive layer." Additionally, the oxygen sink layer is "at least partially oxidized."

Claim 157 recites a metal-polysilicon contact including a "polysilicon layer," a barrier layer," "at least one conductive layer formed over [the] barrier layer in an opening of an insulating layer [and] having at least one vertically extending surface in

[the] opening,” and “at least one oxygen sink layer formed adjacent to and contacting [the] at least one vertically extending surface of [the] conductive layer.” Additionally, the “conductive layer is made of a material which is conductive when oxidized” and the oxygen sink layer is “capable of absorbing oxygen to slow down an oxygen front from reaching [the] conductive layer.”

Kwok relates to an integrated circuit structure formed to have reduced edge stress. (col. 1, lines 9-10). The structure shown in Kwok does not disclose a metal-polysilicon structure including “at least one layer capable of absorbing oxygen formed adjacent to and contacting said at least one vertically extending surface of said conductive layer” as recited in claim 111. Similarly, Kwok does not disclose a metal-polysilicon structure including “at least one oxygen sink layer formed adjacent to and contacting said at least one vertically extending surface of said conductive layer” as recited in claims 136 and 157. The Office Action points to Kwok’s dielectric layer 240 as disclosing the oxygen absorbing/oxygen sink layer of the claimed invention. The dielectric layer 240 of Kwok, however, is neither adjacent to nor contacting a vertically extending surface of a conductive layer (allegedly the Kwok metal layer 230).

Accordingly, for at least the reasons discussed above, claims 111, 136 and 157 are allowable over Kwok. Claims 112 and 117 depend from claim 111 and are allowable along with claim 111. Claim 141 depends from claim 136 and is allowable along with claim 136. Claim 158 depends from claim 157 and is allowable along with claim 157. Applicant respectfully requests that the rejection be withdrawn and the claims allowed.

Claims 114-116, 118-135, 137-140, 143-156 and 160-163 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwok in view of Lou (U.S. Patent No. 6,235,579) (“Lou”). The rejection is respectfully traversed and reconsideration is respectfully requested.

Claim 126 recites a memory cell including a metal-polysilicon structure which includes “at least one conductive layer formed over [a] barrier layer in an opening of an insulating layer [and] having at least one vertically extending surface in [the] opening” and “at least one layer capable of absorbing oxygen formed adjacent to and contacting [the] at least one vertically extending surface of [the] conductive layer.”

Claim 148 recites a memory cell including a metal-polysilicon structure which includes “at least one conductive layer formed over [a] barrier layer in an opening of an insulating layer [and] having at least one vertically extending surface in [the] opening” and “at least one oxygen sink layer formed adjacent to and contacting [the] at least one vertically extending surface of [the] conductive layer.” Additionally, the oxygen sink layer is “at least partially oxidized.”

As previously discussed Kwok does not disclose or suggest a metal-polysilicon structure including “at least one layer capable of absorbing oxygen formed adjacent to and contacting said at least one vertically extending surface of said conductive layer” as recited in claims 111 and 126. Similarly, Kwok does not disclose a metal-polysilicon structure including “at least one oxygen sink layer formed adjacent to and contacting said at least one vertically extending surface of said conductive layer” as recited in claims 136, 148 and 157.

Applicant respectfully submits that Lou also does not disclose or suggest the above listed claim limitations. For example, Lou’s layer 210a, which allegedly corresponds to the oxygen absorbing/oxygen sink layer, is neither adjacent to nor contacting a vertically extending surface of the conductive layer (218a, FIG. 2F). As such, Lou and Kwok fail to teach the same limitation.

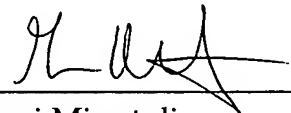
Accordingly, for at least the reasons discussed above, claims 111, 126, 136, 148, and 157 are allowable over the cited combination. Claims 115-116 and 118-125 depend from claim 111 and are allowable along with claim 111. Claims 127-135 depend from claim 126 and are allowable along with claim 126. Claims 137-140 and 144-147 depend from claim 136 and are allowable along with claim 136. Claims 149-156 depend from claim 148 and are allowable along with claim 148. Claims 160-163 depend from claim 157 and are allowable along with claim 157. Applicant respectfully requests that the rejection be withdrawn and the claims allowed.

Claims 121, 131 and 146 have been amended to correct dependencies of these claims.

In view of the above amendment, Applicant believes the pending application is in condition for allowance.

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